

Claims:

1. An in-mold coating molded article obtained by coating the surface of a resin molded product comprising a hydroxyl group-containing polypropylene resin composition (A) with a paint composition for in-mold coating (B), wherein

the hydroxyl group-containing polypropylene resin composition (A) comprises a polypropylene resin (i), an additive rubber (ii) and optionally a polymer compound (iii) other than the polypropylene resin (i) and the additive rubber (ii),

the total hydroxyl value of the polypropylene resin (i), the additive rubber (ii) and the optional polymer compound (iii) is from 1 to 40 (KOH mg/g),

the hydroxyl group-containing polypropylene resin composition (A) has a rubber component content (total of the amount of the additive rubber (ii) and the amount of components soluble in n-decane at 23°C of the polypropylene resin (i) and the optional polymer compound (iii)) of from 15 to 80 % by mass based on 100 % by mass of the total amount of the rubber component and the resin component other than the rubber component,

the paint composition for in-mold coating (B) comprises:

100 parts by mass of a vehicle component (a) comprising 10 to 70 % by mass of an oligomer having at least two

(meth)acrylate groups and 90 to 30 % by mass of an ethylenically unsaturated monomer copolymerizable with the oligomer,

5 to 35 parts by mass of a (meth)acryl modified chlorinated polyolefin (b) having a chlorine content of from

5 2 to 40 % by mass,

0.5 to 5 parts by mass of an organic peroxide polymerization initiator (c), and

2 to 20 parts by mass of a polyisocyanate compound (d).

10 2. The in-mold coating molded article according to claim 1, wherein the hydroxyl group-containing polypropylene resin composition (A) is a resin composition having a hydroxyl value of from 1 to 40 (KOH mg/g) and comprising:

20 to 95 % by mass of the polypropylene resin (i)

15 comprising at least one polypropylene selected from a propylene homopolymer, a propylene block copolymer and a propylene random copolymer, and

5 to 80 % by mass of the additive rubber (ii) (the total amount of the polypropylene resin (i) and the additive rubber
20 (ii) being 100 % by mass),

at least one of the polypropylene resin (i) and the additive rubber (ii) having a hydroxyl group.

3. The in-mold coating molded article according to claim 1, wherein the hydroxyl group-containing polypropylene resin composition (A) is a resin composition having a hydroxyl value of from 1 to 40 (KOH mg/g) and comprising:

5 20 to 95 % by mass of a polypropylene resin (i) comprising at least one polypropylene selected from a propylene homopolymer, a propylene block copolymer and a propylene random copolymer,

 5 to 80 % by mass of the additive rubber (ii) (the total
10 amount of the polypropylene resin (i) and the additive rubber (ii) being 100 % by mass), and

 1 to 60 % by mass of the polymer compound (iii) other than the polypropylene resin (i) and the additive rubber (ii), based on 100 % by mass of the total of the polypropylene resin
15 (i) and the additive rubber (ii),

 at least one of the polypropylene resin (i), the additive rubber (ii) and the polymer compound (iii) having a hydroxyl group.

20 4. The in-mold coating molded article according to claim 1, wherein the hydroxyl group-containing polypropylene resin composition (A) is a polypropylene resin composition containing a hydroxyl group-containing polypropylene.

5. The in-mold coating molded article according to any one of claims 1 to 4, wherein the additive rubber (ii) is an ethylene- α -olefin copolymer.

5

6. The in-mold coating molded article according to any one of claims 1 to 5, wherein the hydroxyl group-containing polypropylene resin composition (A) further contains an inorganic filler.

10

7. A process for preparing an in-mold coating molded article, which process comprises:

injecting a melt of the hydroxyl group-containing polypropylene resin composition (A) as claimed in any one of
15 claims 1 to 6 into a mold cavity of a mold composed of a stationary mold and a movable mold with keeping the mold under a prescribed mold clamping pressure at a mold temperature lower than the melting point of the polypropylene resin component in the hydroxyl group-containing polypropylene resin composition (A)
20 and not less than the temperature at which the paint composition for in-mold coating (B) as claimed in claim 1 is cured,

cooling and solidifying the melt in an extent capable of withstanding the fluid pressure of the paint composition (B)

by hold pressure application for a prescribed time,

opening the mold slightly to form a space between the resulting resin molded product and the mold cavity surface,

injecting the paint composition (B) into the space,

5 increasing the mold clamping pressure again and maintaining the mold clamping condition to cure the paint composition (B), and then

taking out an in-mold coating molded article.

10 8. A process for preparing an in-mold coating molded article, which process comprises:

injecting a melt of the hydroxyl group-containing polypropylene resin composition (A) as claimed in any one of claims 1 to 6 into a mold cavity of a mold composed of a stationary
15 mold and a movable mold with keeping the mold under a prescribed primary mold clamping pressure at a mold temperature lower than the melting point of the polypropylene resin component in the hydroxyl group-containing polypropylene resin composition (A) and not less than the temperature at which the paint composition
20 for in-mold coating (B) as claimed in claim 1 is cured,

during the injection or after completion of the injection, increasing the mold clamping force to a secondary mold clamping force and keeping the melt for a prescribed time to cool and

solidify the melt in an extent capable of withstanding the fluid pressure of the paint composition (B),

opening the mold slightly to form a space between the resulting resin molded product and the mold cavity surface,

5 injecting the paint composition (B) into the space,
increasing the mold clamping pressure again and
maintaining the mold clamping condition to cure the paint composition (B), and then

taking out an in-mold coating molded article.

10

9. A process for preparing an in-mold coating molded article, which process comprises:

injecting a melt of the hydroxyl group-containing polypropylene resin composition (A) as claimed in any one of
15 claims 1 to 6 into a mold cavity of a mold composed of a stationary mold and a movable mold, with keeping the mold at a mold temperature lower than the melting point of the polypropylene resin component in the hydroxyl group-containing polypropylene resin composition (A) and not less than the temperature at which
20 the paint composition for in-mold coating (B) as claimed in claim 1 is cured, in a state that the mold is opened with a prescribed opening,

during the injection or after completion of the injection,

increasing the mold clamping force to a prescribed mold clamping force and keeping the melt for a prescribed time to cool and solidify the melt in an extent capable of withstanding the fluid pressure of the paint composition (B),

- 5 opening the mold slightly to form a space between the resulting resin molded product and the mold cavity surface,
 injecting the paint composition (B) into the space,
 increasing the mold clamping pressure again and
 maintaining the mold clamping condition to cure the paint
- 10 composition (B), and then
 taking out an in-mold coating molded article.